

What is claimed is:

1. A method for inspecting defects, comprising the steps of:

illuminating light to an inspection object formed circuit pattern on surface;

5 detecting an image signal of transmission light by shielding selectively diffraction light pattern generated from said circuit pattern in lights reflected from the surface of said inspection object; and

detecting the defects existing on the surface of the inspection object by processing the detected image signal;

10 wherein said selective shielding of said diffraction light pattern in said detecting step is performed by using a micro-mirror array device or a reflected type liquid crystal, or a transmission type liquid crystal, or an object which is transferred a shielding pattern to an optical transparent substrate, or a substrate or a film which is etched so as to leave shielding patterns, or an
15 optical transparent substrate which can be changed in transmission by heating, sudden cold, or light illumination, or change of electric field or magnetic field, or a shielding plate of cylindrical shape or plate shape.

2. A method for inspecting defects according to claim 1, wherein said inspection object is formed a plurality of chips being repeated the circuit
20 pattern on the surface, and said selective shielding of the diffraction light pattern is performed according to change of the diffraction pattern for every area in one chip being obtained by detecting diffraction light patterns for one chip.

3. An apparatus for inspecting defects, comprising:

25 an illumination optical system which illuminates light to an inspection object formed circuit pattern on surface;

a detection optical system which detects light transmitted a shielding

unit in lights reflected from said inspection object and converts the detected light into an image signal;

the shielding unit which is provided in said detection optical system to selectively shield diffracted light pattern coming from circuit pattern existing on the inspection object; and

a processing system which detects the defects by processing the image signal detected by said detection optical system.

4. An apparatus for inspecting defects according to claim 3; wherein said shielding unit comprises a micro-mirror array device or a reflected type liquid crystal, or a transmission type liquid crystal, or an object which is transferred a shielding pattern to an optical transparent substrate, or a substrate or a film which is etched so as to leave shielding patterns, or an optical transparent substrate which can be changed in transmission by heating, sudden cold, or light illumination, or change of electric field or magnetic field, or a shielding plate of cylindrical shape or plate shape.

5. An apparatus for inspecting defects according to claim 3; wherein said inspection object is formed a plurality of chips being repeated the circuit pattern on the surface, and said shielding unit comprises so as to shield selectively the diffraction light pattern in accordance with change information of the diffraction pattern for every area in one chip in diffraction light patterns for one chip.